

CLAIMS

What is claimed is:

1. A method of reporting channel information in a wireless communication system, comprising:
 - a mobile terminal normally providing a basic channel report, said basic channel report at least partially characterizing a downlink channel;
 - said mobile terminal receiving at least one common feedback criterion broadcast to a plurality of mobile terminals;
 - said mobile terminal determining if said mobile terminal satisfies a condition based on said at least one common feedback criterion; and
 - said mobile terminal selectively providing an enhanced channel report regarding said downlink channel based on said determining.
2. The method of claim 1 wherein providing an enhanced channel report comprises providing an enhanced channel report that is a superset of said basic channel report.
3. The method of claim 1 wherein said at least one common feedback criterion comprises at least one threshold.
4. The method of claim 3 wherein said at least one common feedback criterion comprises a channel quality indicator threshold.
5. The method of claim 3 wherein said at least one common feedback criterion comprises a throughput level threshold.
6. The method of claim 1 wherein said at least one common feedback criterion comprises at least one range.

7. The method of claim 1 wherein said basic channel report comprises a channel quality indicator.

8. The method of claim 1 wherein normally providing a basic channel report comprises normally providing a basic channel report on a periodic basis.

9. The method of claim 1 wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing, on a periodic basis, either said basic channel report or said enhanced channel report based on said determining.

10. The method of claim 1 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters.

11. The method of claim 1 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

12. The method of claim 1 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to said first set of channel parameters and information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

13. The method of claim 1:

wherein said basic channel report comprises a channel quality indicator; and
wherein said mobile terminal selectively providing an enhanced channel
report based on said determining comprises said mobile terminal
selectively providing either said basic channel report or said enhanced
channel report based on said determining.

14. The method of claim 1 further comprising providing an explicit indication of the
presence of said enhanced channel report when said enhanced channel report is
provided.

15. The method of claim 1 further comprising providing an implicit indication of the
presence of said enhanced channel report when said enhanced channel report is
provided.

16. The method of claim 15 wherein providing an implicit indication of the presence
of said enhanced channel report comprises employing a different spreading factor to
indicate the presence of said enhanced channel report.

17. The method of claim 15 wherein providing an implicit indication of the presence
of said enhanced channel report comprises selectively employing a different pilot pattern
to indicate the presence of said enhanced channel report.

18. The method of claim 1:

wherein providing a basic channel report comprises providing a basic channel report over a first logical channel; and
wherein selectively providing an enhanced channel report regarding said downlink channel comprises selectively providing an enhanced channel report over said first logical channel.

19. The method of claim 1:

wherein providing a basic channel report comprises providing a basic channel report over a first logical channel; and
wherein selectively providing an enhanced channel report regarding said downlink channel comprises selectively providing an enhanced channel report over at least a second logical channel.

20. The method of claim 19 wherein selectively providing an enhanced channel report over at least a second logical channel comprises selectively providing an enhanced channel report over said first logical channel and said second logical channel.

21. A wireless communications mobile terminal, comprising:
 - a transmitter operative to normally provide a basic channel report, said basic channel report at least partially characterizing a downlink channel;
 - a receiver operative to receive at least one common feedback criterion broadcast to a plurality of mobile terminals; and
 - control logic coupled to said transmitter and said receiver and operative to determine if said mobile terminal satisfies a condition based on said at least one common feedback criterion and to cause said transmitter to selectively transmit an enhanced channel report regarding said downlink channel based on said determining.
22. The mobile terminal of claim 21 wherein said enhanced channel report is a superset of said basic channel report.
23. The mobile terminal of claim 21 wherein said basic channel report comprises a channel quality indicator.
24. The mobile terminal of claim 21 wherein said transmitter is operative to normally provide said basic channel report on a periodic basis.
25. The mobile terminal of claim 21 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters.

26. The mobile terminal of claim 21 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

27. The mobile terminal of claim 21 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to said first set of channel parameters and information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

28. The mobile terminal of claim 21 wherein said control logic is further operative to cause said transmitter to transmit an explicit indication of the presence of said enhanced channel report when said enhanced channel report is transmitted.

29. The mobile terminal of claim 21 wherein said control logic is further operative to cause said transmitter to transmit an implicit indication of the presence of said enhanced channel report when said enhanced channel report is transmitted.

30. The mobile terminal of claim 29 wherein said implicit indication of the presence of said enhanced channel report comprises a different spreading factor.

31. The mobile terminal of claim 29 wherein said implicit indication of the presence of said enhanced channel report comprises a different pilot pattern.

32. The mobile terminal of claim 21:

wherein said transmitter is operative to normally said basic channel report
over a first logical channel; and

wherein said control logic is further operative to cause said transmitter to
selectively transmit an enhanced channel report regarding said downlink
channel over said first logical channel based on said determining.

33. The mobile terminal of claim 21:

wherein said transmitter is operative to normally said basic channel report
over a first logical channel; and

wherein said control logic is further operative to cause said transmitter to
selectively transmit an enhanced channel report regarding said downlink
channel over at least a second logical channel based on said determining.

34. The mobile terminal of claim 33 wherein said control logic is further operative to
cause said transmitter to selectively transmit an enhanced channel report regarding said
downlink channel over said first logical channel and said second logical channel based
on said determining.

35. A computer readable medium comprising a computer readable program embodied therein for a wireless communication mobile terminal, the mobile terminal having a transmitter, the computer readable program comprising:

computer readable program code that normally causes said transmitter to transmit a basic channel report, said basic channel report at least partially characterizing a downlink channel;

computer readable program code that is operative to respond to the receipt of at least one common feedback criterion broadcast to a plurality of mobile terminals by determining if said mobile terminal satisfies a condition based on said at least one common feedback criterion and to cause said transmitter to selectively transmit an enhanced channel report regarding said downlink channel based on said determining.

36. The computer readable medium of claim 35 wherein said basic channel report comprises a channel quality indicator.

37. The computer readable medium of claim 35 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters.

38. The computer readable medium of claim 35 wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

39. The computer readable medium of claim 35 wherein said basic channel report comprises information related to a first set of one or more channel parameters, and wherein said enhanced channel report comprises information related to said first set of channel parameters and information related to a second set of one or more channel parameters of said downlink channel different from said first set of channel parameters.

40. A method of reporting channel information in a wireless communication system, comprising:

a mobile terminal receiving at least one common feedback criterion broadcast to a plurality of mobile terminals;
said mobile terminal determining if said mobile terminal satisfies a condition based on said at least one common feedback criterion; and
said mobile terminal selectively providing a channel report regarding a downlink channel based on said determining, said channel report at least partially characterizing said downlink channel.

41. The method of claim 40 wherein said channel report comprises at least a channel quality indicator.

42. The method of claim 40 wherein said at least one common feedback criterion comprises at least one threshold.

43. The method of claim 42 wherein said at least one common feedback criterion comprises a channel quality indicator threshold.

44. The method of claim 42 wherein said at least one common feedback criterion comprises a throughput level threshold.

45. The method of claim 40 wherein said at least one common feedback criterion comprises at least one range.

46. A wireless communications mobile terminal, comprising:
- a transmitter;
 - a receiver operative to receive at least one common feedback criterion broadcast to a plurality of mobile terminals; and
 - control logic coupled to said transmitter and said receiver and operative to determine if said mobile terminal satisfies a condition based on said at least one common feedback criterion and to cause said transmitter to selectively transmit a channel report regarding a downlink channel based on said determining, said channel report at least partially characterizing said downlink channel.
47. The mobile terminal of claim 46 wherein said channel report comprises at least a channel quality indicator.
48. The mobile station of claim 46 wherein said at least one common feedback criterion comprises at least one threshold.
49. The mobile station of claim 48 wherein said at least one common feedback criterion comprises a channel quality indicator threshold.
50. The mobile station of claim 48 wherein said at least one common feedback criterion comprises a throughput level threshold.
51. The mobile station of claim 46 wherein said at least one common feedback criterion comprises at least one range.

52. A method of controlling channel information reporting in a wireless communication system, comprising:

a base station receiving a plurality of basic channel reports transmitted from a plurality of mobile terminals, said basic channel reports at least partially characterizing one or more downlink channels from said base station; determining, by said base station, at least one common feedback criterion; said at least one common feedback criterion helping to define a condition whose satisfaction controls which plurality of said plurality of mobile terminals subsequently transmit an enhanced channel report regarding one or more of said downlink channels to said base station; and broadcast transmitting said at least one common feedback criterion from said base station to said plurality of mobile terminals.

53. The method of claim 52 wherein determining at least one common feedback criterion comprises determining at least one common feedback criterion based on at least a desired amount of enhanced channel reports.

54. The method of claim 53 wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate.

55. The method of claim 53 wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator.

56. The method of claim 55 wherein determining at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a plurality of reported channel quality indicators.

57. The method of claim 53 wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and an amount of data queued at said base station for transmission to a plurality of said plurality of mobile terminals.

58. A base station in a wireless communication system, comprising:

at least one receiver circuit receiving a plurality of basic channel reports

transmitted from a plurality of mobile terminals, said basic channel reports

at least partially characterizing one or more downlink channels from said

base station;

a transmitter;

control logic connected to said receiver and said transmitter and operative to

determine at least one common feedback criterion; said at least one

common feedback criterion helping to define a condition whose

satisfaction controls which plurality of said plurality of mobile terminals

subsequently transmit an enhanced channel report regarding one or more

of said downlink channels to said base station; and

said control logic further operative to cause said transmitter to transmit said at

least one common feedback criterion in a broadcast fashion from said

base station to said plurality of mobile terminals.

59. The base station of claim 58 wherein said control logic is further operative to determine said at least one common feedback criterion based on at least a desired amount of enhanced channel reports.

60. The base station of claim 59 wherein said control logic is further operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate.

61. The base station of claim 59 wherein said control logic is further operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator.

62. The base station of claim 61 wherein said control logic is further operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and a plurality of reported channel quality indicators.

63. The base station of claim 59 wherein said control logic is further operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and an amount of data queued at said base station for transmission to a plurality of said plurality of mobile terminals.

64. A computer readable medium comprising a computer readable program embodied therein for a wireless communication base station, the base station having at least one transmitter circuit and at least one receiver circuit, the computer readable program comprising:

computer readable program code that is operative to oversee said receiver circuit receiving a plurality of basic channel reports transmitted from a plurality of mobile terminals, said basic channel reports at least partially characterizing one or more downlink channels from said base station;

computer readable program code that is operative to determine at least one common feedback criterion based on a desired amount of enhanced channel reports; said at least one common feedback criterion helping to define a condition whose satisfaction controls which plurality of said plurality of mobile terminals subsequently transmit an enhanced channel report regarding one or more of said downlink channels to said base station; and

computer readable program code that is operative to cause said at least one transmitter circuit to transmit said at least one common feedback criterion in a broadcast fashion from said base station to said plurality of mobile terminals.

65. The computer readable medium of claim 64 wherein said computer readable program code that is operative to determine at least one common feedback criterion based on a desired amount of enhanced channel reports comprises computer readable program codes that is operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate.

66. The computer readable medium of claim 64 wherein said computer readable program code that is operative to determine at least one common feedback criterion based on a desired amount of enhanced channel reports comprises computer readable program codes that is operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator.

67. The computer readable medium of claim 64 wherein said computer readable program code that is operative to determine at least one common feedback criterion based on a desired amount of enhanced channel reports comprises computer readable program codes that is operative to determine said at least one common feedback criterion based on said desired amount of enhanced channel reports and an amount of data queued at said base station for transmission to a plurality of said plurality of mobile terminals.